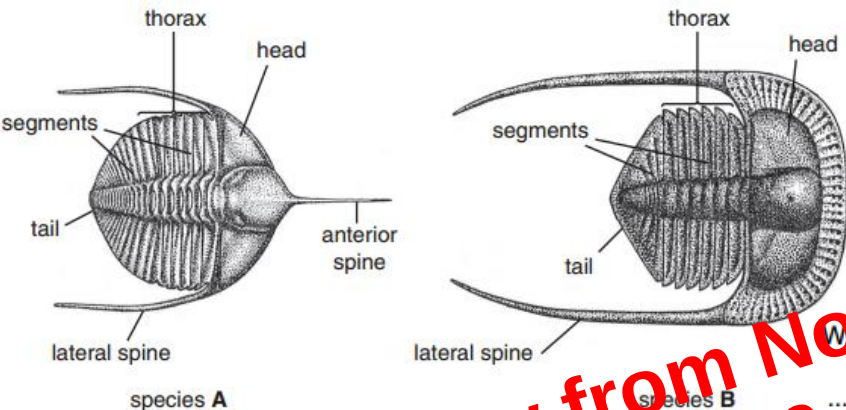




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What is meant by species richness?

..... the number of species present (in a habitat) ; [1]

(i) List **three** observable features from Fig. 6.1 that suggest the two species are related.

- 1 . 3 parts to body ;
- 2 . head + thorax + tail ;
- 3 . segmented ; [3]
 lateral spines / spines from both sides of head ;
 thorax / tail , similar shape ;

List **two** observable features from Fig. 6.1, **other than size**, that could suggest they are **different** species.

- 1 anterior spine (from head) on A ;
 longer lateral spines on B ;
- 2 less rounded / AW , head on B ; [2]
 any other reasonable difference ; ;

State the **two** different causes of variation.

- 1 . genes / genetic / mutation ;
- 2 . environment(al) ; [2]

Suggest **three** measures that could be taken **in the long term** to preserve the numbers of white-backed vultures, once the captive bred individuals have been released into the wild.

- ban / make illegal , use of **this** painkiller ;
- provide alternative painkillers
- (that do not have the same ecological impact) ;
- no hunting / no killing / legal protection ,
- of white-backed vultures ;
- protected areas / sanctuary / reserves ;
- provide breeding sites ;
- prevent habitat destruction ;
- monitoring (of vultures) / tagging ;
- feeding programme (for released birds) /
- provide uncontaminated carcasses ;
- qualified ref. to education ;
- promotion of ecotourism ; [3]
- in case the population falls again ,
- sperm and egg banks / frozen embryos ;

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(a) Fig. 5.1 shows a section of a leaf from a pear tree that is infected by the mildew fungus.

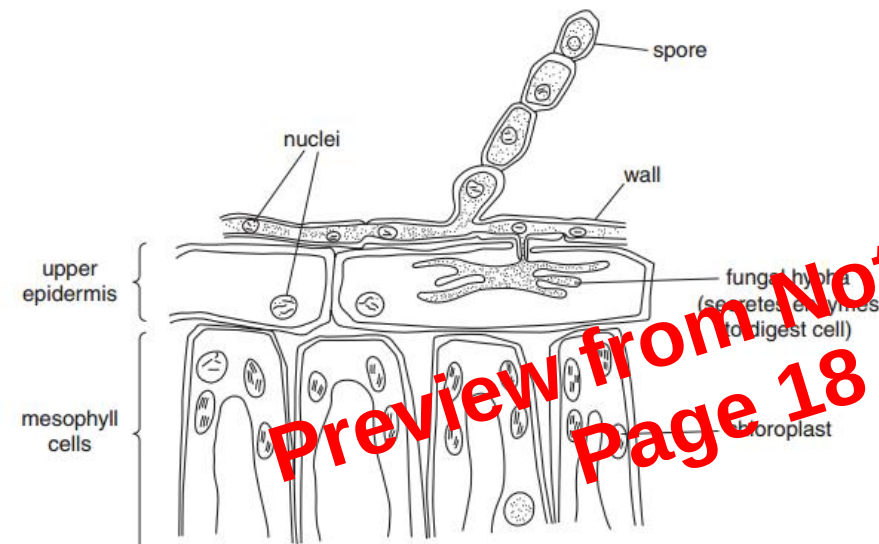


Fig. 5.1

- (i) State **one** feature, **shown in Fig. 5.1**, that excludes **both** the pear tree and mildew from the kingdom Prokaryotae.

nucleus / nuclei ;

[1]

State **two** reasons why mildew should be placed in the kingdom Fungi.

mildew ...

(usually) chitin / not cellulose (cell) , wall ;

external digestion / secretes enzymes externally ;

heterotrophic / saprophytic / saprotrophic / saprobior

no , plastids / chloroplasts / amyloplasts ;

spores ;

hyphae / mycelium ;

multi-nucleate / coenocytic / aseptate ;

[2]

State **two** reasons why the pear tree should be placed in the kingdom Plantae.

pear tree ...

cellulose cell walls ;

multicellular ;

has , chloroplasts / plastids / chlorophyll /

photosynthetic pigment ;

(photo)autotrophic / performs photosynthesis ;

[2]